

REMARKS

Claims 1-2, 4-12 and 17 are pending in this application. Claims 3 and 7-11 are withdrawn from consideration. By this Amendment, claims 1-2, 4-12 are amended and claim 17 is added. Claims 3 and 13-16 are canceled.

Applicant appreciates the Examiner indicating that claims 4-6 and 12 would be allowable if rewritten to overcome 35 U.S.C. §112, rejections and to include the features of the base claims and intervening claims.

I. Information Disclosure Statement

The Examiner asserts that the Information Disclosure Statement filed December 21, 2001 fails to satisfy formal requirements.

The Examiner's attention is directed to the enclosed Supplemental Information Disclosure Statement updating the U.S. patent applications (application no. 09/981,998, now U.S. Patent No. 6,705,000 B2 and application no. 09/745,442, now U.S. Patent No. 6,493,927 B2) on Form PTO-1449, which were originally submitted in an Information Disclosure Statement on December 21, 2001.

II. The Claims Satisfy Formal Requirements

The Examiner asserts that "an apparatus" should be changed to "the electric component holding apparatus". In accordance with the Examiner's suggestion, the claims are amended. Withdrawal of the objection to the claims is respectfully requested.

III. The Abstract Satisfies Formal Requirements

The Examiner objects to the Abstract for exceeding 150 words. Accordingly, an amended Abstract is attached in accordance with the formal requirements. Withdrawal of the objection to the Abstract is respectfully requested.

IV. Claims 1, 2, 4-6 and 12 Satisfy the Requirements of 35 U.S.C. §112, Second Paragraph

Claims 1, 2 4-6 and 12 are rejected under 35 U.S.C. §112, second paragraph as indefinite. Accordingly, the claims are amended. Withdrawal of the rejection of claims 1, 2, 4-6 and 12 under 35 U.S.C. §112, second paragraph is respectfully requested.

V. The Claims Define Patentable Subject Matter

Claims 1 and 2 are rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 6,161,886 to Furuya et al. This rejection is respectfully traversed.

The applied art does not teach, disclose or suggest a locked-state maintaining device, as recited in claim 1.

Instead, Furuya et al. discloses, as best seen in Figs. 1 and 2, a component mounting head which includes a nozzle member 22 and a vacuum rod 23 to which the nozzle member 22 is detachably attached. A steel ball 26 is supported by the vacuum rod 23 such that the ball 26 is biased by a compression spring 25 toward an insertion hole 220 of the vacuum rod 23. When the nozzle member 22 is inserted in the insertion hole 220, a wall face 30a of the nozzle 22 first engages the ball 26 and pushes the ball 26 in an outward direction so that the ball 26 is retracted against the biasing force of the spring 25. Subsequently, the ball 26 engages a recess 30b of the nozzle 22 going to the biasing force of the spring 25. Thus, the nozzle 22 is attached to the vacuum rod 23.

However, when an external force is exerted to the nozzle 22 in a downward direction to cause the nozzle 22 to move away from the vacuum rod 23, the wall face 30a of the nozzle 22 pushes the ball 26 in the outward direction against the biasing force of the spring 25. Thus, the nozzle 22 is allowed to move downward away from the vacuum rod 23. Please see col. 7, lines 26-52 of Furuya.

Accordingly, Furuya does not teach, disclose or suggest the locked-state maintaining device as recited in claim 1. That is, the locked-state maintaining device prevents the lock member to transmit any components of an external force to the operable member to increase an amount of elastic deformation of the elastic member when the external force to cause the component holder to move away from the holder-holding member is exerted to the component holder in the locked state.

Further, in contrast, Furuya does not teach or suggest providing an element corresponding to the operable member as claimed in claim 1. Additionally, the steel ball 26 of Furuya's device does not correspond to the lock member as recited in claim 1. That is, when an external force is exerted to the nozzle 22 to cause the nozzle 22 to move away from the vacuum rod 23, the steel ball 26 is moved relative to the vacuum rod 23 to transmit a component of the external force to the compression spring 25 to increase an amount of elastic deformation of the same 25, and is disengaged from the recess 30a of the nozzle 22 to allow the nozzle 22 to be unlocked from the vacuum rod 23.

As asserted in page 5, line 4 of the Office Action, the Examiner asserts that the steel ball 26 corresponds to the operable member as recited in claim 1. However, when an external force to cause the nozzle 22 to move away from the vacuum rod 23 is exerted to the nozzle 22, the steel ball 26 is moved to transmit a component of the external force to the spring 25 to increase the amount of elastic deformation of the same 25. Thus, the steel ball 26 does not correspond to the operable member as recited in claim 1.

In Furuya's device, the steel ball 26 has two functions. One function is to lock the nozzle 22 to the vacuum rod 23 and also the function of increasing the amount of elastic deformation of the spring 25. In contrast, according to the claimed apparatus, the lock member has the function of locking the component holder to the holder-holding member and the operable member has the function of increasing the amount of elastic deformation of the

elastic member. Due to at least this difference, Furuya's device cannot operate like the locked-state maintained device as recited in claim 1.

With respect to the reasons for rejection on page 6, paragraph 9 of the Office Action, Furuya discloses a component mounting head including a nozzle member 4 and a vacuum rod 5 to which the nozzle member 4 is detachably attached. A steel ball 12a, 12b is supported by the vacuum rod 5 such that the ball is biased by a compression spring 13a, 13b toward an insertion hole of the vacuum rod 5.

However, similar to the embodiments shown in Fig. 1 and 2, the component mounting head shown in Figs. 4 and 5 does not employ the lock member or the operable member recited in claim 1. This is also similar to the embodiments shown in Figs. 6 and 7 of Furuya.

For at least the reasons discussed above, Furuya fails to teach, disclose or suggest the features recited in claim 1 as discussed above. Further, it would not have been obvious to one of skill in the art to modify the teaching of Furuya to provide the electric component holding apparatus as recited in the claims. Withdrawal of the rejection of the claims under 35 U.S.C. §103(a) is respectfully requested.

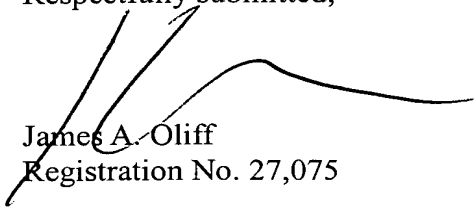
Finally, Furuya does not teach or suggest the subject matter recited in new claim 17. In particular, Furuya does not disclose at least the locked-state maintaining device recited in claim 17.

VI. Conclusion

Applicants respectfully submit that all claims 1-12 and 17 are in condition for allowance. Withdrawal of the rejection and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Kevin M. McKinley
Registration No. 43,794

JAO:KMM/jfb

Attachments:

Amended Abstract
Supplemental Information Disclosure Statement

Date: January 19, 2005

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
--